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Ph.D. research chemist/materials scientist specializing in computational and experimental studies of phase transitions in solid solutions. Expert on first principles calculations of phase diagrams. Pioneer in the application of modern techniques of statistical mechanics (cluster variation method) to the study of phase transitions in ceramic and alloy systems. Leading expert on the theory of order-disorder, phase separation, magnetic mineralogy and multicritical phase relations in minerals, ceramics, and metals. At present I am working on first-principles based simulations of relaxor ferroelectrics such as $Pb(Sc_{1/2}Nb_{1/2})O_3$ and $Pb(Mg_{1/3}Nb_{2/3})O_3$.

Education:

- **Ph.D.** in Earth and Space Sciences, State University of New York at Stony Brook, December 1982.
- **B.A.** in Geology, University of California at Santa Barbara, June 1975.

Work Experience:

- U. S. Department of Commerce, National Institute of Standards and Technology, formerly National Bureau of Standards, Materials Scientist, 6/87 to present.
- American Society for Metals, Research Associate, Database Coordinator, and Associate Editor for the Bulletin of Alloy Phase Diagrams. At the National Bureau of Standards, 2/1/85 to 6/87.
- National Research Council Associate, National Bureau of Standards, 2/1/83 to 1/31/85.

Teaching Experience:

- Short course on the cluster variation method, University Autònoma, Barcelona, Spain, 1995.
- Teaching assistant for Crystallography, a first year graduate course.
- Organization and teaching of the laboratory section, teaching the theory and application of precession camera photography and computer programming in BASIC.
- Teaching assistant for Petrology, an upper division undergraduate course. Substitute lecturer for Professor A. E. Bence.

Society Memberships: American Physical Society, American Geophysical Union.

Committee Work: Councillor, Geological Society of Washington, D.C. 1987-1989; A.G.U Mineral acquisitions and distribution subcommittee, 1985-1987.

Personal Information: Born March 20, 1949; Married with two daughters, 14 and 15 years old. Interests: chess, tennis, canoeing, theater, film, fly fishing.

Publications:
(peer reviewed articles)

- Serguei Prosandeev, Eric Cockayne and Benjamin Burton, Studies of KNbO_3 , KTaO_3 and LiTaO_3 Solid Solutions, Accepted f Li Off-Centering in $\text{K}_{1-x}\text{Li}_x\text{TaO}_3$; First Principles Calculations, WERB Submission 10/24/2002
- Umesh V. Waghmare, Eric J. Cockayne, and Benjamin P. Burton, Ferroelectric Phase Transitions in Nano-scale Chemically Ordered $\text{PbSc}_{0.5}\text{Nb}_{0.5}\text{O}_3$ using a First-principles Model Hamiltonian, WERB approval 10/25/2002
- B. P. Burton and E. Cockayne, "Unexpected ground state structures in relaxor ferroelectrics", *Ferroelectrics*, **270**, 173- (2002).
- S. Prosandeev, E. Cockayne, B.P. Burton, V. Trepakov, S. Kapphan, M. Savinov, and L. Jastrabik, Properties of $\text{K}_{1-x}\text{Li}_x\text{TaO}_3$ Solid Solutions: First-Principles Computations and Experiments. In press, *Ferroelectrics*.
- First Principles Based Calculations of the $\text{CaCO}_3\text{--MgCO}_3$ and $\text{CaCO}_3\text{--MgCO}_3$ Subsolidus Phase Diagrams, B.P. Burton and A. Van de Walle, in press *Physics and Chemistry of Minerals*, 10/23/02.
- B.P. Burton and E. Cockayne, Prediction of the $[\text{Na}_{1/2}, \text{Bi}_{1/2}]\text{TiO}_3$ Ground State. in *Fundamental Physics of Ferroelectrics*, H. Krakauer Ed. AIP Proceedings 582, pp 82- (2001).
- B.P. Burton, N. Dupin, S.G. Fries, G. Grimvall, A. Fernández Guillermet, P. Miodownik, W.A. Oates, and V. Vinograd, Ab Initio Calculations in the CALPHAD Environment. WERB 2/8/01. *Z. Metallkd.* 92(6) (2001) 514-525.
- E. Cockayne, B. P. Burton, and L. Bellaiche, "Temperature-dependent properties of PSN from first principles", in *Fundamental Physics of Ferroelectrics*, AIP 582, pp 191-2001 (H. Krakauer, ed.).
E. Cockayne and B.P. Burton "Comparative dielectric response in CaTiO_3 and $\text{CaAl}_{1/2}\text{Nb}_{1/2}\text{O}_3$ from first principles", *J. Appl. Phys.* 90 1459 (2001).
- B.P. Burton, Why $\text{Pb}(\text{B}, \text{B}')\text{O}_3$ perovskites disorder more easily than $\text{Ba}(\text{B}, \text{B}')\text{O}_3$ perovskites, and the Thermodynamics of 1:1-type Short Range Order in PMN, *J. Phys. Chem. Solids* 61(2) 327- (2000).
- B.P. Burton and E. Cockayne Why $\text{Pb}(\text{B}, \text{B}')\text{O}_3$ perovskites disorder at lower temperatures than $\text{Ba}(\text{B}, \text{B}')\text{O}_3$ perovskites, *PRB*, 60 R12542-R12545 (1999).

- B.P. Burton Long-range versus short-range interactions and the configurational energies of Ba(B, B')O₃ perovskites, *Modelling and Simulation in Materials Science and Engineering*, 8, 211- (2000).
- B. Burton Empirical Cluster Expansion Models of Cation Ordering-Disorder in $A(B'_{1/3}B''_{2/3})O_3$ Perovskites, *Phys. Rev. B* 59, 1 (1999)
- B.P. Burton, R.P. McCormack, G. Ceder, R.L.B. Selinger, G. Kresse, and J. Hafner, "Modeling Cation Ordering in Some $A(B'_{1/3}B''_{2/3})O_3$ Perovskites", in *First-Principles Calculations for ferroelectrics*, R.E. Cohen Ed. AIP Conference Proceedings 436, 20-, (1998).
- B.P. Burton, R.P. McCormack, B.H. Toby, and E.K. Goo, "Cation Ordering in Some ABO₃ Perovskites", *Ferroelectrics* 194, 187-206 (1997).
- R. McCormack and B.P. Burton, Modeling Phase Stability in $A(B_{1/3}B'_{2/3})O_3$ Perovskites, *Computational Materials Science*, 8, 153- (1997).
- P. D. Tepesch, A. F. Kohan, G. D. Garbulsky, G. Ceder, C. Coley, H. T. Stokes, L. L. Boyer, M. J. Mehl, B.P. Burton, K. Cho and J. Joannopoulos, A Model to Compute Phase Diagrams in Oxides with Empirical or First-Principles Energy Methods and Application to the Solubility Limits in the CaO-MgO System *J. Am. Ceram. Soc.* 79, 2033- (1996).
- B.P. Burton and R.E. Cohen, Nonempirical calculation of the $Pb(Sc_{0.5},Ta_{0.5})O_3$ quaternary phase diagram. *Phys. Rev. B* 52, 792- (1995).
- B.P. Burton and R.E. Cohen, First principles study of cation ordering in the system $Pb(Sc_{1/2},Ta_{1/2})O_3$ and $(1 - x)Pb(Sc_{1/2},Ta_{1/2})O_3 - xPbTiO_3$, *Ferroelectrics*, V164, 201- (1995).
- C.J. Rawn, R.S. Roth, B.P. Burton, and M.D. Hill Phase equilibria and crystal chemistry in portions of the system $SrO - CaO - Bi_2O_3 - CuO$, PART V - the system $SrO - CaO - Bi_2O_3$. *J. Am. Ceram. Soc.* 77[8], 2137- (1994).
- I.N. Sora, W. Wong-Ng, Q. Huang, R.S. Roth, C.J. Rawn, B.P. Burton, and A. Santoro X-ray and Neutron Diffraction Study of $CaBi_2O_4$, *J. Solid State Chem.* 109, 251- (1994).
- B.P. Burton and R.E. Cohen, Theoretical study of cation ordering in the system $Pb(Sc_{1/2},Ta_{1/2})O_3$, *Ferroelectrics*, 151, 331- (1994).

- B.P. Burton, C.J. Rawn, R.S. Roth and N.M. Hwang Phase equilibria and crystal chemistry in portions of the system $SrO - CaO - Bi_2O_3 - CuO$, PART IV - the system $CaO - Bi_2O_3 - CuO$ J. Research, NIST, 98, 469- (1993).
- J.B.Prise, C.C. Torardi, C.J. Rawn, R.S. Roth, B.P. Burton, and A. Santoro The Synthesis and structure of $Ca_6Bi_6O_{15}$: its relationship to $Ca_4Bi_6O_{13}$. J. Solid State Chem. 102, 132- (1993).
- B.P. Burton, J.E. Osburn and A. Pasturel Theoretical Calculations of the NiAl-NiTi Phase Diagram Based LMTO and LAPW Cohesive Energy Calculations. Phys. Rev. B45, 7667- (1992).
- R.S. Roth, N.M. Hwang, C.J. Rawn, B.P. Burton, and J.J. Ritter Phase equilibria in the systems $CaO - CuO$ and $CaO - Bi_2O_3$. J. Am. Ceram. Soc. 74 [9], 2148- (1991).
- C.C. Torardi, J.B.Prise, A. Santoro, C.J. Rawn, R.S. Roth and B.P. Burton $Sr_2Bi_2O_5$: a compound containing 3-coordinated bismuth. J. Solid State Chem. 93, 228- (1991).
- L.A. Bendersky, B.P. Burton, W.J. Boettinger and F.S. Biancaniello Ordered ω derivatives in a Ti-37.5Al-20Nb atScr. Met. 24, 1541- (1990).
- L.A. Bendersky, W. J. Boettinger, B.P. Burton, F.S. Biancaniello and Clara B. Shoemaker Investigation of ω -related phases in alloys of composition Ti_4Al_3Nb . Acta Met. 38,[6] 931- (1990).
- J.B.Prise, C.C. Torardi, M.H. Wangbo, C.J. Rawn, R.S. Roth and B.P. Burton $Ca_4Bi_6O_{13}$, a compound containing an unusually low bismuth coordination number and short Bi=Bi contacts. Chemistry of Materials, V2, 4, 454- (1990).
- R.S. Roth, C.J. Rawn, B.P. Burton and F. Beech. Phase relations and crystal chemistry in portions of the system SrO-CaO-CuO, Part-II -The system $SrO - 1/2Bi_2O_3 - CuO$. J. Research of NIST, 95, 291- (1990).
- R.S. Roth, C.J. Rawn, J.J. Ritter, and B.P. Burton Phase relations of the system SrO-CaO-CuO. Accepted for publication by the J. Am. Ceram. Soc. 72(8) 1545- (1989).
- B.P. Burton and P.M. Davidson Multicritical phase relations in minerals. In "Advances in Physical Geochemistry, S.Ghose, J.M.D. Coey, and E. Salje Eds. pp 60-, (1988) Springer-Verlag.
- B.P. Burton, and P. M. Davidson Short-range order and frustration in omphacite. Phy. Chem. Minerals, 15:570- (1988).

- Kikuchi, R. and Burton Calculation of some oxide systems using the cluster variation method. *Physica B* 150 132- (1988).
- Burton, B.P. and P. M. Davidson Order-disorder in omphacitic pyroxenes: A model for coupled substitution in the point approximation. *Reply Am. Min.*, 73, 916- (1988).
- Capobianco, C., B.P. Burton, P. M. Davidson, and A. Navrotsky, A. Structural and calorimetric studies of order-disorder in $CdMg(CO_3)_2$. *J. Solid State Chem.* 71, 214- (1987).
- Burton, B.P. Theoretical analysis of cation ordering in binary rhombohedral carbonate systems. *Am. Min.*, 72, 329- (1987).
- Davidson, P.M. and B.P. Burton Order-disorder in omphacitic pyroxenes: A model for coupled substitution in the point approximation. *Am. Min.*, 72, 337- (1987).
- Burton, B.P. Theoretical analysis of chemical and magnetic ordering in the system $Fe_2O_3 - FeTiO_3$. *Am. Min.*, 70, 1027- (1985).
- Burton, B.P. and R. Kikuchi Thermodynamic analysis of the system $CaCO_3 - MgCO_3$ in the tetrahedron approximation of the cluster variation method. *Am. Min.* 69, 165- (1984).
- Burton, B.P. and R. Kikuchi The antiferromagnetic- paramagnetic transition $\alpha-Fe_2O_3$ in the single prism approximation of the cluster variation method. *Phys. Chem. Minerals* 11, 125- (1984).
- Burton, B.P. Thermodynamic analysis of the system $Fe_2O_3 - FeTiO_3$. *Phys. Chemof Minerals* 11, 132- (1984).

Conference Proceedings Papers:

- Serguei Prosandeev, Eric Cockayne and Benjamin Burton, First Principles Studies of $KNbO_3$, $KTaO_3$ and $LiTaO_3$ Solid Solutions, Accepted for publication AIP conference proceedings; Workshop on Ferroelectrics Wash. D.C. Feb. 2002.
- Eric Cockayne, Benjamin P. Burton, Effect of Ordered Microdomains on the Properties of $PbSc_{1/2}Nb_{1/2}O_3$: A First Principles Effective Hamiltonian Study, Accepted, AIP conference proceedings; Workshop on Ferroelectrics Wash. D.C. Feb. 2002.
- R. McCormack and B. Burton, Modeling Phase Stability in $A(B_{1/3}B'_{2/3})O_3$ Perovskites, *MRS Proceedings*, In press (1997).

- B.P. Burton, T.G. Clark, K.L. Lukas, A.D. Pelton, H. Seifert, and P. Spencer, Thermodynamic Models and Data for Pure Elements and Other Endmembers of Solutions, Group 5: Estimations of Enthalpies and Entropies of Transition, CALPHAD, 19 [4] 537- (1995).
- B.P. Burton, and A. Pasturel LMTO/CVM calculations of metastable BCC-based phase relations in the system Fe-Be. In "Statics and Dynamics of Alloy Phase Transformations," P.E.A. turchi and A. Gonis, Ed. NATO ASI Series, V319, Plenum Press (1994).
- B.P. Burton, A. Pasturel, and W.C. Carter LMTO/CVM calculations of partial BCC based phase relations in the system Ni-Al-Ti. Proceedings of the international workshop on Ordering and Disordering in alloys, Grenoble (1991).
- Burton, B.P. The interplay of chemical and magnetic ordering in oxide minerals. Reviews in Mineralogy V25, 303-321, D.H. Lindsley Ed. MSA, Wash. DC (1991).
- B.P. Burton, J.E. Osburn and A. Pasturel LMTO/CVM and LAPW/CVM calculations of the NiAl-NiTi pseudobinary phase diagram. MRS Symposium on High- Temperature Ordered Intermetallic Alloys, IV, V213 107-112, L.A. Johnson, D.P. Pope, J.O. Stiegler Eds. (1991).
- Roth, R. S., C. J. Rawn and B.P. Burton, Phase equilibria and crystal chemistry in portions of the system $SrO-CaO-Bi_2O_3-CuO$. Part III-preliminary phase diagrams for the ternary systems $SrO-Bi_2O_3-CuO$, $CaO-Bi_2O_3-CuO$ and $SrO-CaO-Bi_2O_3$. Ceram. Trans. V13 "Superconductivity and Ceramic Superconductors" 23-34. Am. Ceram. Soc., Westerville OH (1990).
- Burton, B.P. Application of the ϵ -G approach to binary rhombohedral carbonate systems. International Geological Conference, W. D. C. Summer 1989.
- Burton, B.P. Modeling order-disorder transitions with CVM calculations. In press, Computer Modeling of Phase Diagrams, L. H. Bennett Editor, The Metall. Society of AIME (1986).
- Burton, B.P. Tricritical phase relations in minerals. In Computer Modeling of Phase Diagrams, L. H. Bennett editor, The Metall. Soc. of AIME 129- (1986).

Books:

- B.P. Burton, "Order-Disorder and Phase Separation," in Encyclopedia of Materials Science: Science and Technology, IBSN: 0-08-0431526, pp. 6493-6502, Elsevier Science Ltd. (2001).
- B.P. Burton in "Phase Diagrams of Binary Iron Alloys, H. Okamoto, ed., American Society for Metals, (1993), Chapters on Al-Fe, Fe-K, Fe-Na, Fe-Pb, Fe-Rb, and Fe-Zn.
- Massalski, T. B. J. L. Murray, and L. H Bennett, (B.P. Burton, assistant editor; 1987) Binary Alloy Phase Diagrams, ASM.

Invited Lectures and Presentations:

- American Ceramic Society, 4/30-5/3/00, St. Louis MO.
- Materials Research Lab Seminar, U. Penn. 3/16/00.
- Complex Systems Theory Branch, Naval Restarch Lab. Wash. DC, Oct. 19, 1999.
- Fundamental physics of Ferroelectrics, Aspen CO, Feb. 13-20, 2000.
- Thermodynamics and Structural Properties of Alloy Materials, June 20-24 (1999), Aruba.
- B. Burton, Sixth Williamsburg Workshop on First-Principles Calculations for Ferroelectrics, February 1-4, 1998.
- Mineralogy at the Millenium April 12, 1999. Carneige Institute of Washington DC.
- American Ceramic Society, PCRM, October 21-24 (1998), Irvine, CA.
- Williamsburg workshop on first principles calculations for ferroelectrics, Williamsburg VA, February 1997
- 51'st International Calorimetry Conference, Vancouver Canada, August, 1996
- CECAM workshop on Theoretical predictions of alloy stability, Lyon, France June 1996
- Materials Research Society, San Francisco CA, March 1996
- Williamsburg workshop on first principles calculations for ferroelectrics, Williamsburg VA, February 1996
- Williamsburg workshop on first principles calculations for ferroelectrics, Williamsburg VA, February 1995

- International workshop on the theory and application of the cluster variation and path probability methods, San Juan Teotihuacan, Mexico, June 1995
- Institute for Materials Science, University Autonoma, Barcelona, March, 1995
- Geosciences Department, Oxford University, March, 1995
- Geosciences Department, Cambridge University, February 20, 1995
- Materials Science Department, MIT, July, 1994
- Earth and Space Sciences Department, SUNY-Stony Brook, July, 1994
- Geological and Geophysical Sciences Department, and Materials Institute , Princeton University, July, 1994
- Applied Physics Department, Yale University, July, 1994
- Williamsburg workshop on first principles calculations for ferroelectrics, Williamsburg VA, February 1994
- Allied Signal Engineered Materials Research Center Des Plaines IL. October, 1992
- Mineralogical Society of America Short Course on Oxide Minerals May-June, 1991
- European Geological Union, March, 1991
- The Metallurgical Society (TMS), October, 1989
- 44'th Annual Calorimetry Conference, August, 1989
- International Geological Congress, July, 1989
- Mineral Physics Section, AGU, Spring 1989
- E.I. duPont deNemours Experimental Station Wilmington DE. June, 1989
- Geophysical Laboratory of Washington DC, March, 1989
- International Conference on Phase Stability and Electronic Structure in Advanced Ceramics, August, 1987
- Geology Department Penn. State University, Fall, 1986
- Argonne National Labs, Mater. Science Department, Winter, 1986
- Metallurgy Department, Royal Institute of Technology Stockholm Sweden, Fall, 1986

- Earth Sciences Department Lawrence Livermore Labs. Spring, 1986
- Metalurgical Society, Toronto, Fall, 1985
- AGU, Baltimore, Microscopic-Macroscopic Session, Spring, 1985
- Geology Department, California Institute of Technology, Winter, 1984
- Institute Josef Stefan, Ljubljana Yugoslavia, Summer, 1984
- Geology Department University of Maryland, Winter, 1983
- Geology Department Princeton University, Winter, 1983
- U.S.G.S Reston VA. Fall, 1983
- Geophysical Laboratory of Washington DC, Fall, 1983
- Catholic Univ. Statistical Physics Seminar, Spring, 1982

Contributed Presentations:

- B. Burton, American Physical Society, 3/16-3/20, 1998.
- B. Burton, 1998 ONR Transducer Materials and Transducers Workshop, PSU, State College, PA. 5/12-14/98.
- PHONONS AND STATIC DIELECTRIC CONSTANT IN CaTiO_3 FROM FIRST PRINCIPLES, Eric Cockayne and Benjamin P. Burton, NIST, oral presentation at the Materials Research Society Fall 1999 meeting, Boston, MA, 2 December 1999.
- PHONONS AND STATIC DIELECTRIC CONSTANT IN CaTiO_3 FROM FIRST PRINCIPLES Eric Cockayne and Benjamin P. Burton, NIST, poster presentation at the Fundamental Physics of Ferroelectrics meeting, Aspen, CO, 16 February 2000.
- Comparative Dielectric Response in CaTiO_3 and $\text{Ca}(\text{Al}_{1/2}\text{Nb}_{1/2})\text{O}_3$ from First Principles, Eric Cockayne and Benjamin P. Burton (NIST), oral presentation at the American Physical Society March Meeting, 22 March 2000.
- Phase Stability and Cation Disorder in $\text{A}(\text{B},\text{B}')\text{O}_3$ Perovskites, R. McCormack and B. Burton, The APS, March, 1996.
- B.P. Burton, and A. Pasturel LMTO/CVM calculations of BCC-based ordering in the system Fe-Be. CALPHAD XXI, Jerusalem, Israel 6/14-6/19/92.

- B.P. Burton, and A. Pasturel LMTO/CVM calculations of metastable BCC-based phase relations in the system Fe-Be. NATO Advanced Study Institute, Rhodes, Greece, 6/21- 7/3/92.
- C.J. Rawn, R.S. Roth, and B.P. Burton Phase equilibria and crystal chemistry in the system $SrO - CaO - Bi_2O_3 - CuO$. ACerS Electronics and Glass and Optical Materials, Arlington, VA. 10/22-10/23/91.
- B.P. Burton, A. Pasturel, and J.E. Osburn LMTO/CVM and FLAPW/CVM based "ab initio" calculations of BCC-based ordering in the system Ni-Al-Ti. TMS October 1991, Symposium on phase diagram prediction.
- W.C. Carter and B.P. Burton An efficient algorithm for minimizing the CVM functional. TMS October 1991, Symposium on phase diagram prediction.
- W. J. Boettinger, L.A. Bendersky, B.P. Burton and F.S. Biancaniello Ordered ω -related phases in alloys of composition Ti_4Al_3Nb . ASM Materials Congress 8-11 October, 1990.
- Burton, B.P., J.E. Osburn and A. Pasturel LMTO/CVM calculation of the NiAl-NiTi pseudobinary phase diagram. MRS 1990 Fall meeting.
- Burton, B.P., J.E. Osburn and A. Pasturel First Principles calculation of the NiAl-NiTi pseudobinary phase diagram. CALPHAD XIX June 1990.
- Roth, R. S., C. J. Rawn, B.P. Burton and F. Beech Crystal chemistry and phases in the system $SrO - CaO - Bi_2O_3 - CuO$. A.C.A Seattle WA. 7/23-7/29/89.
- Burton, B.P. Pseudospin model of the orientational order-disorder transitions in $NaNO_3$ and $CaCO_3$. A.G.U. Spring meeting 1989.
- Ross, C.R. and B.P. Burton Outside cone phase diagram topology; implications for the systems $CaMgSi_2O_6 - NaAlSi_2O_6$ and $NaAlSi_3O_8 - CaAl_2Si_2O_8$. A.G.U. Spring meeting 1989.
- Burton, B.P. and C.R. Ross CVM models of the systems $NaNO_3$, $CaCO_3$, $FeCl_2$, and $CaMgSi_2O_6 - NaAlSi_2O_6$, and implications for the system $NaAlSi_3O_8 - CaAl_2Si_2O_8$. CALPHAD XVIII meeting, Var Gard Sweden 5/28-6/2/89.
- Davidson, P. M. and B.P. Burton Short-range order and frustration in omphacite, EOS 69, 16, 521 (1988).
- Burton, B.P. Recalculation of the $Fe_2O_3 - FeTiO_3$ phase diagram, EOS, 68, 16, 296 (1987).

- Burton, B.P. and P.M. Davidson, Order-disorder and phase separation in the systems $Fe_2O_3 - FeTiO_3$, $CaCO_3 - MgCO_3$, and $CaMgSi_2O_6 - NaAlSi_2O_6$. IMA, 14'th general meeting (1987).
- Burton, B.P. Theoretical Analysis of cation ordering in rhombohedral carbonate systems. 1986 Spring Meeting of AGU (1986).
- Burton, B.P. CVM analysis of cation ordering in rhombohedral carbonates. Ceramic Bull. 9/86 1243, title only (1986).
- Davidson, P. M. and B.P. Burton Order-disorder in omphacitic pyroxenes. 1986 Spring Meeting of AGU (1986).
- Burton, B.P. Modeling order-disorder (O-D) transitions by the cluster variation method (CVM): considerations of space group symmetry, short range order (SRO) and critical dimensionality. EOS, V66, 18, 389- (1985).
- Burton, B.P. CVM analyses of the systems $Fe_2O_3 - FeTiO_3$ and $CaCO_3 - MgCO_3$. Ceramic Bulletin, V64, 3, 451 (1984).
- Burton, B.P. Theoretical analysis of systems with tricritical points. EOS, V64, 18, 350 (1983).
- Burton, B.P. CVM analysis of the system $CaMgSi_2O_6 - NaAlSi_2O_6$. EOS, V64, 45, 869 (1983).
- Burton, B.P. and R. Kikuchi The antiferromagnetic- paramagnetic transition in Fe_2O_3 : CVM single-prism approximation. EOS, V63, 18, 301 (1982).
- Burton, B.P. and R. Kikuchi Cluster-variation method models of phase relations in the systems $Fe_2O_3 - FeTiO_3$, and $CaCO_3 - MgCO_3$. GAAPBC (GSA abstracts) 13(7) 420 (1981).
- Burton, B.P. Crystallography of the Ilmenite- corundum order-disorder transformation for an intermediate ilmenite- hematite solution. EOS, 61, 17, 408 (1980).
- Burton, B.P. and D. H. Lindsley Magnetic and Equilibrium phase diagrams of $Fe_2O_3 - FeTiO_3$: a reconciliation. AGU Transactions (EOS) V58, 519 (1977).

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